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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/672,069	09/28/2000	Yukihisa Takeuchi	789_048 NP	7280

25191 7590 03/31/2005

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SYRACUSE, NY 13261-7068

EXAMINER
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BUDD, MARK OSBORNE

ART UNIT	PAPER NUMBER
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2834

DATE MAILED: 03/31/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

H.A

**Office Action Summary**

Application No.

09/672,069

Applicant(s)

TAKEUCHI ET AL.

Examiner

Mark Budd

Art Unit

2834

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
 Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM  
 THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 08 February 2005.  
 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.  
 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 3,4,6-41 and 68-76 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) ☒ Claim(s) 14-41 is/are allowed.  
 6) ☒ Claim(s) 3,4,6-13 and 68-76 is/are rejected.  
 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) ☐ All b) ☐ Some \* c) ☐ None of:  
 1. ☐ Certified copies of the priority documents have been received.  
 2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)  
 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
 Paper No(s)/Mail Date 12-14-04.  
 4) ☐ Interview Summary (PTO-413)  
 Paper No(s)/Mail Date. \_\_\_\_\_.  
 5) ☐ Notice of Informal Patent Application (PTO-152)  
 6) ☐ Other: \_\_\_\_\_.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 3, 4, 6-13 and 68-76 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brunnee in view of Arai and combined with Ogawa (057).

Brunnee (figs. 3, 5, 7 and 9) teaches a piezoelectric actuator comprising a pair of mutually opposing thin plate sections #27, #28, a fixation section #25, and a moveable section #12, #13 including a slot which has sides parallel to the thin plate sections (or not parallel if considering the slot to be between #31, #32). The driving piezoelectric elements #14, #15 are only a single layer and do not extend onto either the fixation section or the moveable section. However, Arai (col. 10, ln 9-18) (also figs. 9-12) teaches placing the piezoelectric thin films to lie over the fixation and moveable elements (areas of greatest stress) in order to improve the efficiency of the device. Ogawa (057) teaches providing a stack of piezo thin films (increased displacement) and the electrode architecture that allows electrical connections to be made from a same side of the stack of elements (ease of manufacture). Thus, for all the reasons noted above it would have been obvious to one of ordinary skill in the art to provide Brunnee with multiple layers of piezo elements having take out electrodes both located on the outside of the stack and with the piezo material extending beyond the thin plate section onto the fixation section and/or moveable sections.

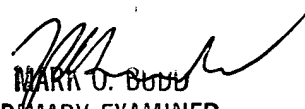
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Further cited of interest are Kurino (shape of base material) and Cosman (location of piezo elements). Also cited as possible candidates for obvious type double patenting (should claims similar to e.g. claim 10 be ultimately allowable over the rejections of record) are Takeuchi (582) (claims 18 and 19), Teakeuchi (056), Takeuchi (582), Etakeuchi (192), Takeuchi (899), Etakeuchi (476), Takeuchi (539), Takeuchi (898)k, Takeuchi (981) and Takeuchi (751).

Claims 14-41 are allowed.

Budd/ds

03/19/05

  
MARK O. BUDD  
PRIMARY EXAMINER  
ART UNIT 2834